Low-Cost Two-Ampere Tungar Battery Charger

SHOULD it become necessary to store your car, this tungar battery charger will keep a 6-volt storage battery fully charged so that you can operate your auto radio indoors. This is only one of many timely civilian defense uses for an efficient and inexpensive battery charger.

It consists of a homemade stepdown transformer and a G.E. type 195528 2-ampere tungar bulb that screws into an ordinary porcelain lamp socket. Laminations for the transformer are cut from common black stovepipe iron and stacked as shown in Fig. 1. The transformer is wound to supply 2 volts at 10 amps. for lighting the filament, and 15 volts at 2 amps. to be rectified for the battery.

Pile the strips in a 5-in. hollow square, the ends of alternate strips overlapping 1¼ in. Now build up the primary and secondary legs in the cigarbox arrangement Fig. 2, piling strips for one leg of the core

(Continued to page 174)

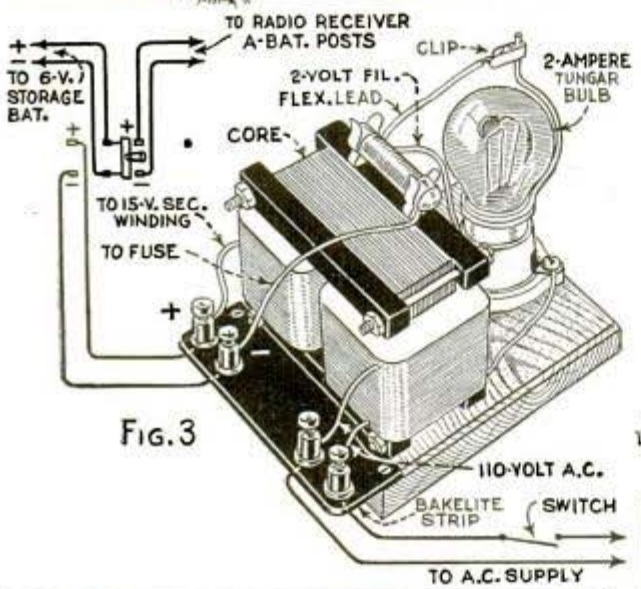


FIG. 3

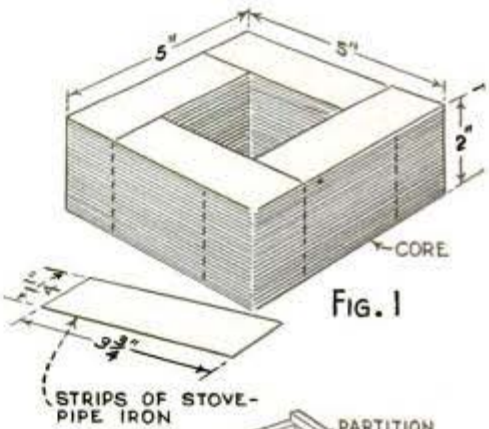


FIG. 1

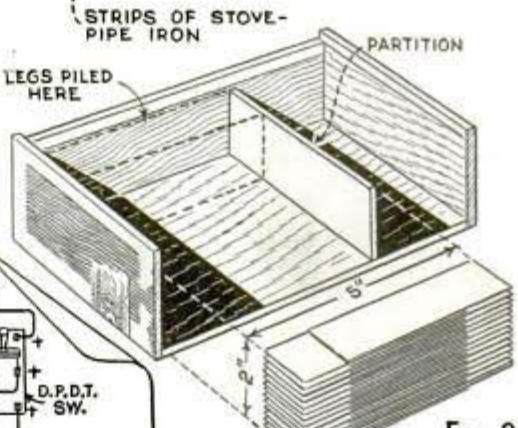
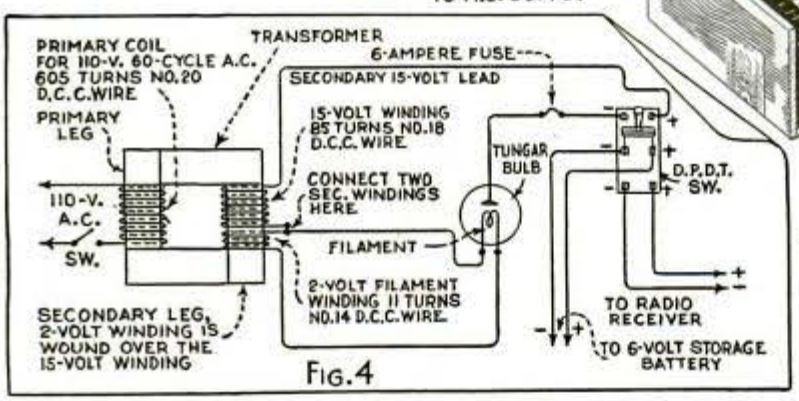


FIG. 2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TRANSFORMER
6-AMPERE FUSE
SECONDARY 15-VOLT LEAD
PRIMARY LEG
15-VOLT WINDING 85 TURNS NO.18 D.C.C. WIRE
TUNGAR BULB
D.P.D.T. SW.
110-V. A.C. SW.
CONNECT TWO SEC. WINDINGS HERE
FILAMENT
2-VOLT FILAMENT WINDING 11 TURNS NO.14 D.C.C. WIRE
TO RADIO RECEIVER
TO 6-VOLT STORAGE BATTERY
SECONDARY LEG, 2-VOLT WINDING IS WOUND OVER THE 15-VOLT WINDING

FIG. 4

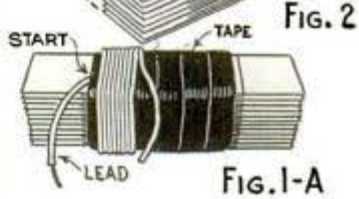

FIG. 1-A

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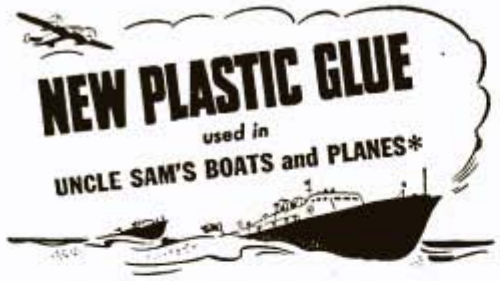

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Low-Cost Two-Ampere Charger

(Continued from page 158)

and shoving the alternate strips to opposite ends to keep the ends even and square. Coat each strip with shellac; when the pile is 2 in. high clamp a wood block on it until dry, then remove the leg and tape it as shown in Fig. 1-A. Winding details are given in Fig. 4. About 1½ pounds of No. 20 d.c.c. wire and about ½ pound of No. 18 d.c.c. were required; this was obtained from burned-out transformers. Leave long start and finish winding leads on each coil, binding starting end under first layer of turns. Coat each layer with shellac as wound. When completed place the legs in

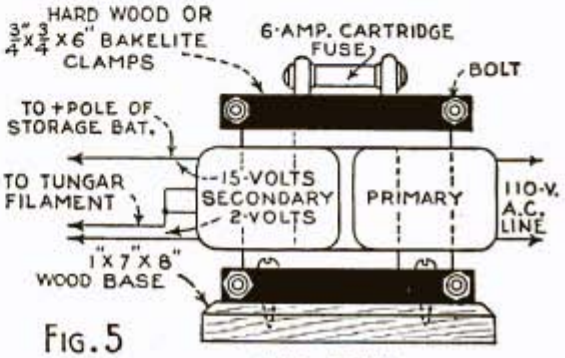

FIG. 5

END VIEW

a moderate oven and bake until dry. The primary is wound directly over the tape, but the secondary is wound over 2 layers of tape and one layer of empire cloth, available from electric shops. Solder, tape and shellac all splices and connections.

The 15-volt winding is wound on first and then 11 turns of No. 14 d.c.c. wire is wound over it for the 2-volt winding. When completed stand both legs on end and insert the side laminations, then coat completely with shellac and dry. Clamp top and bottom ends of the core with 4½-in. bolts to prevent hum and then complete all of the terminal connections shown in Figs. 3 and 5. Connect the battery to the charger and turn on the line switch; if bulb does not glow, turn off current and disconnect the end of the 15-volt winding where it is connected to the 2-volt coil and connect it to the other end, reversing the 2-volt connections. If bulb still refuses to glow it may be necessary to add 1 or 2 turns to the 2-volt winding or 5 or 6 turns to the 15-volt winding. Do not enclose the charger in a box; provide plenty of air circulation when charging.